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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,519	02/10/2004	Edward McCoy	18525/04071	1060
24024	7590	11/01/2005	EXAMINER	
CALFEE HALTER & GRISWOLD, LLP 800 SUPERIOR AVENUE SUITE 1400 CLEVELAND, OH 44114			SPAHN, GAY	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/775,519	Applicant(s) MCCOY, EDWARD	
	Examiner Gay Ann Spahn	Art Unit 3673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 12-22 is/are pending in the application.
4a) Of the above claim(s) 12-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 2 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I (claims 1-6, 21, and 22, drawn to a system for draining fluid from a layered soil profile, classified in class 405, subclass 50) in the reply filed on 19 July 2005 is acknowledged. The traversal is on the ground(s) that the Applicant alleges that there is no serious burden on the examiner in having to examine both inventions since "[t]he technology underlying both sets of claims is related, and thus a thorough prior art search conducted for one set of claims would certainly yield results useful for examination of the other set of claims." This is not found persuasive because the examiner has demonstrated that the search for the system claims (classified in class 405, subclass 50) is indeed different than the search for the method claims (classified in class 73, subclass 32R).

The requirement is still deemed proper and is therefore made FINAL.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the

(1) "means for determining particle size of the materials comprising said layers" as recited in claim 1, line 5,

(2) "means for determining the fluid retention properties of said layers based on said particle size" as recited in claim 1, line 6-7, and

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(3) "means for inserting said drainage members into said layered soil profile at substantially regular intervals to form an array" as recited in claim 1, lines 12-13, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

(1) page 4, line 5, after the word "results", the word --in-- should be inserted.

Appropriate correction is required.

Claim Objections

Claim 21 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The recitation that the "soil profile is a putting green" fails to further limit the structure of the previous claim.

Claim 2 is objected to because of the following informalities:

(1) there is no period punctuation mark (i.e., --.--) at the end of claim 2.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6, 21, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 5, it is not understood what constitutes the "means for determining the particle sizes of the materials comprising said layers". At page 6, lines 8-24, the specification states, as follows:

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The exemplary general method of the present invention for draining excess fluid, i.e., water, from a layered soil profile, includes the steps of removing a sample of the layered soil profile, separating the individual layers of the soil profile, determining the particle size of the layers, determining the water retention properties of the layers based on the particle size; and inserting a plurality of fibrous capillary drains at regular intervals into the soil profile such that the fibrous capillary drains traverse one or more of the layers of the soil profile. Typically, the capillary drains are permanently placed within the soil profile and are not removed.

For analyzing a root zone / sand layer type soil profile, a soil-coring tool is used to withdraw a sample of the profile and visually inspect it to ensure that the soil is appropriately layered and that the root zone material is sandy throughout. A small sample of the root zone is removed from the coring tool for closer visual examination to ensure that the particles fall within an expected size range. The water retention properties of the root zone are inferred using basic soil physics principles (see Example 1), and from visual inspection of the particle sizes. Because many turf root zones are sufficiently similar, a single material, e.g., fiberglass rope will perform adequately in most situations.

The examiner respectfully submits that there is nothing in this disclosure specifying what constitutes a “means for determining particle size of the materials comprising said layers”. A visual examination of a sample of a profile taken from a soil-coring tool does not constitute a “means”.

Claim 1, line 6-7, it is not understood what constitutes the “means for determining the fluid retention properties of said layers based on said particle size”. The examiner respectfully submits that there is nothing in the above-quoted disclosure specifying what constitutes a “means for determining the fluid retention properties of said layers based on said particle size”. Inferring the water retention properties of the root zone from basic soil physics principles and from a visual inspection of the particle sizes does not constitute a “means”.

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Claim 1, lines 12-13, it is not understood what constitutes the "means for inserting said drainage members into said layered soil profile at substantially regular intervals to form an array". On page 12, line 8 through page 13, line 12, the specification states, as follows:

There are presently about 267,000 putting greens in the U.S. with 70-90% of these greens utilizing a layered soil profile as described above. Presumably, the methods utilized for installing capillary drains into existing putting greens can be used for newly constructed greens. The specific installation approach typically depends on whether the capillary drain has a circular cross-section, as in a fiberglass rope, or a rectangular cross-section as in a fiberglass tape.

In the case of a circular cross-section capillary drain, installation is a two-step procedure. First, a pilot hole is created in the soil extending from the surface to the maximum depth of drain insertion. Subsequently, the capillary drain material is inserted into the pilot hole. As the pilot hole needs to extend through both the sandy root zone and a layer of fine gravel, it is desirable to employ a solid, pointed tip, circular diameter tine to create the pilot hole of a diameter slightly larger than the capillary drain. A mechanical actuator such as a hydraulic ram, for example, is used to drive the tine vertically into the soil and remove it leaving a pilot hole. To facilitate insertion of a flexible capillary drain (such as a fiberglass rope) to the desired depth, some added stiffening support may be required. Inserting and affixing a small diameter wire, plastic or wooden dowel into the center and along the long axis of the rope provides this stiffening support. The modified section of fiberglass rope is then be inserted to the desired depth. The resultant cavity extending from the soil surface to upper surface of the capillary drain is then backfilled with appropriate root zone material.

Installation of a fiberglass tape capillary drain is a one-step procedure because a pilot hole is not typically needed. A section of fiberglass tape, lying flat and extended over the soil surface is driven directly into the soil to the appropriate depth by a thin but reinforced metal plate. The section of tape (c.a. 2-inch wide by 0.125-inch thick) is typically twice the length of the final vertical extension of the drain and has affixed in the center a narrow protective band. The tape is centered in a channel having a slot in the bottom that subsequently rests on, or is supported just above, the soil surface. The slot in the channel is positioned over the point of insertion. The reinforced metal plate is slightly wider than the tape and has a length corresponding to the maximum depth of insertion. The metal plate is positioned over the center of the tape and correspondingly

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the slot in the channel. Again, using a mechanical actuator, the metal plate is driven vertically, intercepting the protected center of the tape, and inserting the capillary drain into the soil. In this case, the capillary drain is a doubled section of fiberglass tape and only a small scar remains visible on the soil surface.

The installation methods described above may also include mechanization of the insertion process so that a single operator of a small, motorized unit could, in a timely fashion, install an array of drains within a green.

It is the examiner's position that it is not clear from the above quoted paragraphs of the specification what constitutes the "means for inserting said drainage members into said layered soil profile".

More particularly, the examiner notes that the claim recites that the drainage members comprises "a length of fiberglass" and that the "length of fiberglass" may be either a fiberglass rope or a fiberglass tape. If the "length of fiberglass" is a fiberglass rope, then it is not clear what the "means for inserting said drainage members into said layered soil profile" is because the specification page 12, lines 18-27 only describe a tine driven into the soil by a mechanical actuator such as a hydraulic ram to form a pilot hole and the use of a stiffening support such as a small diameter wire, plastic wire, plastic, or wooden dowel to facilitate insertion of a flexible capillary drain, such as a fiberglass rope, to the desired depth. However, there is no specific disclosure as to what the "means" are that are performing the insertion of the flexible capillary drain or fiberglass rope. Is the flexible capillary drain or fiberglass rope inserted by hand once the pilot hole is drilled? Thus, the "means for inserting said drainage members into said layered soil profile" has not be disclosed with sufficient particularity.

If the "length of fiberglass" is a fiberglass tape, then it is not clear what the "means for inserting said drainage members into said layered soil profile" is because the specification page 12, line 29 through page 13, line 8 only describes the fiberglass tape as being driven into the soil by a thin, but reinforced metal plate using a mechanical actuator. However, the mechanical actuator is not described with sufficient particularity to allow the examiner to determine what constitutes the "means for inserting said drainage member into said layered soil profile".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-6, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (U.S. Patent No. 4,451,175) in view of Applicant's admitted prior art on page 6, lines 27-29 of the specification.

As to claim 1, Yamashita et al. disclose system for draining fluid from a layered soil profile, comprising:

a layered soil profile comprising at least a first layer (5) and a second layer (1) beneath said first layer (5), wherein the material of said first layer is different from the material of said second layer (first layer (5) is a sand mat layer which is a different material than the second layer (1) which is a soil layer);

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a plurality of elongated porous drainage members (2, 3);
means for inserting said drainage members into said layered soil profile at substantially regular intervals to form an array (see col. 2, lines 47-53); and
wherein said drainage members (2, 3) extend from said first layer (5) substantially through said second layer (1) and provide a substantially continuous porous pathway for draining said fluid from said layered soil profile.

Yamashita et al. fails to explicitly disclose means for determining the particle sizes of the materials comprising said layers, and means for determining the fluid retention properties of said layers based on said particle size, and that each of the drainage members further comprises a length of fiberglass having a distribution of pore sizes compatible with said particle sizes and said fluid retention properties.

Applicant's admitted prior art on page 6, lines 27-29 of the specification states that "[t]he water retention and hydraulic conductivity properties of some commercially available fiberglass ropes, as well as the use of fiberglass as a passive capillary sampler of soil, is known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for draining fluid from a layered soil profile of Yamashita et al. by replacing the sand-filled cylindrical bags of Yamashita et al. with fiberglass ropes as taught by Applicant's admitted prior art in order to provide a flexible capillary drain member that was sturdier and had less chance of breakage upon removal or splitting down the middle when in place in the ground. Further, one of ordinary skill in the art would have known to choose a drainage member compatible with

the particle sizes of the materials comprising said layers, and the fluid retention properties of said layers based on said particle size as that is well known in the art.

As to claim 3, Yamashita et al. disclose the system of claim 1 as discussed above, and Yamashita et al. also disclose that the orientation of said drainage members within said soil profile is substantially vertical.

As to claim 4, Yamashita et al. disclose the system of claim 1 as discussed above, and Applicant's admitted prior art also disclose that each length of fiberglass further comprises at least one of fiberglass rope and fiberglass tape.

As to claim 5, Yamashita et al. disclose the system of claim 1 as discussed above, and Applicant's admitted prior art also discloses that the length of fiberglass has a diameter of about 0.64 to 2.54 cm (see page 6, lines 29-31 of Applicant's present specification).

As to claim 6, Yamashita et al. disclose the system of claim 1 as discussed above, and Yamashita et al. also disclose that the fluid is perched water retained in one or more layers of said layered soil profile.

As to claim 22, Yamashita et al. disclose the system of claim 1 as discussed above.

Yamashita et al. fails to explicitly disclose that the drainage members are spaced about 24 inches (61 cm) from one another.

However, it is well settled that changes in size/proportion/dimensions do not constitute a patentable difference. See *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232

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(1984), wherein the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Therefore, to space apart the drainage members about 24 inches (or 61 cm) from each other would have constituted a further obvious expedient to one having ordinary skill in the art at the time the invention was made since it is well founded that merely changing dimensions is not unobvious (see also *Brunswick Corporation v. Champion Spark Plug Company*, 216 USPQ 1 (CA 7 1982)).

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (U.S. Patent No. 4,451,175) in view of Applicant's admitted prior art on page 6, lines 27-29 of the specification, as applied to claim 1 above, and further in view of Plowman et al. (U.S. Patent No. 5,458,436).

As to claim 21, Yamashita et al. disclose the system of claim 1 as discussed above.

Yamashita et al. does not explicitly disclose that the soil profile is a putting green.

Plowman et al. disclose a modular drainage tube construction system for a putting green (see Figs. 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for draining fluid from a layered soil profile of

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Yamashita et al. by placing the system under a putting green as taught by Plowman et al. in order to have a less expensive and easier installed system for drainage.

Allowable Subject Matter

Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, and the claim objection, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1-6, 21, and 22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 5,037,240 to Sherman discloses wick-like drains (10). U.S. Patent No. 3,371,492 to Mise et al. discloses a foundation utilizing osmotic pressure. U.S. Patent No. 5,316,410 to Blume disclose a foundation drain system. U.S. Patent No. 6,277,274 to Coffman discloses a method and apparatus for treating stormwater runoff. U.S. Patent No. 6,467,994 to Ankeny et al. discloses an apparatus and method for beneficial use or handling of runoff or collected water. U.S. Patent No. 4,983,068 to Kozak et al. discloses construction material. U.S. Patent No. 3,646,766 to Hilton et al. discloses the installation of sand drains. U.S. Patent No. 3,396,541 to Lamberton discloses a means and method for constructing sand drains in the earth's surface. U.S. Patent No. 5,222,831 to Todd, Sr. et al. discloses tennis court irrigation. U.S. Patent No. 4,639,165 to Flecknoe-Brown discloses a drainage tube. U.S. Patent No. 4,793,728 to Ellis discloses subsurface water drainage system. U.S. Patent No. 6,854,924 to Ring discloses a liquid drainage unit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gay Ann Spahn whose telephone number is (571)-272-7731. The examiner can normally be reached on Monday through Thursday, 8:30 am to 7:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather C. Shackelford can be reached on (571)-272-7049. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Gay Ann Spahn, Patent Examiner
October 19, 2005



**MICHAEL SAFAVI
PRIMARY EXAMINER
ART UNIT 354**